

proceeds only insufficiently, resulting in the occurrence of residual film. In order to solve the problem, it is requested a means, for example, that a polymer binder having a high acid value is used in the photosensitive layer of printing plate precursor for improving developability or a monomer having an acid group is used together. However, in case of using the binder having such a high acid value, another problem in printing, for example, a phenomenon in which adhesion of printing ink is disturbed during the printing (so-called blinding) tends to occur.

SUMMARY OF THE INVENTION

Therefore, the present invention aims to solve these problems described above.

Specifically, an object of the present invention is to provide a plate-making method of a lithographic printing plate wherein an alkali developing solution having a relatively low pH, which is preferred in view of environment and safety, is used, good developability is constantly achieved in the non-image area so that no stain occurs in printing and damage to the image area by the development is small to provide an image having excellent strength.

Another object of the present invention is to provide a plate-making method of a lithographic printing plate, which realizes regularly good press life.

Other objects of the present invention will become apparent from the following description.

As a result of intensive investigations to achieve the objects described above, it has been found that a dissolving speed of the photosensitive layer of photopolymerization type in the unexposed area increases and on the contrary, penetration of the developing solution is restrained in the exposed area crosslinked with the photopolymerization by using a developing solution comprising an inorganic alkali agent and a nonionic surface active agent of a specific structure.

It has been also found that when a compound having a nitrogen atom and an ethylenically unsaturated double bond in the molecule thereof such as a urethane acrylate or an N-substituted acrylamide is used as a monomer component for the photosensitive layer, the above described effects remarkably increase, whereby a lithographic printing plate having a extremely good press life is obtained to complete the present invention.

Specifically, the present invention includes a plate-making method of a lithographic printing plate, which comprises exposing imagewise a photosensitive lithographic

printing plate comprising an aluminum support and a photosensitive layer comprising a photosensitive composition of photopolymerization type, which contains a compound having a nitrogen atom and an ethylenically unsaturated double bond, a photopolymerization initiator and a polymer binder; and developing the exposed printing plate with a developing solution containing (1) an inorganic alkali agent and (2) a nonionic surface active agent having a polyoxyalkylene ether group.

DETAILED DESCRIPTION OF THE INVENTION

In accordance with the plate-making method of a lithographic printing plate of the present invention, not only degradation of developing characteristics due to the lapse of time and/or repeated use of the developing solution is prevented, but also good developability is constantly achieved in the non-image area so that no stain occurs in printing and damage to the image area by the development is small to provide an image having excellent strength.

Further, according to the plate-making method of a lithographic printing plate of the present invention, it is possible to prepare a printing plate free from printing stain and excellent in press life, and the method is preferred in view of safety since a pH of the developing solution is relatively low and enables to improve the